

A Unified Network Security Architecture for Large, Distributed Networks, Phase I

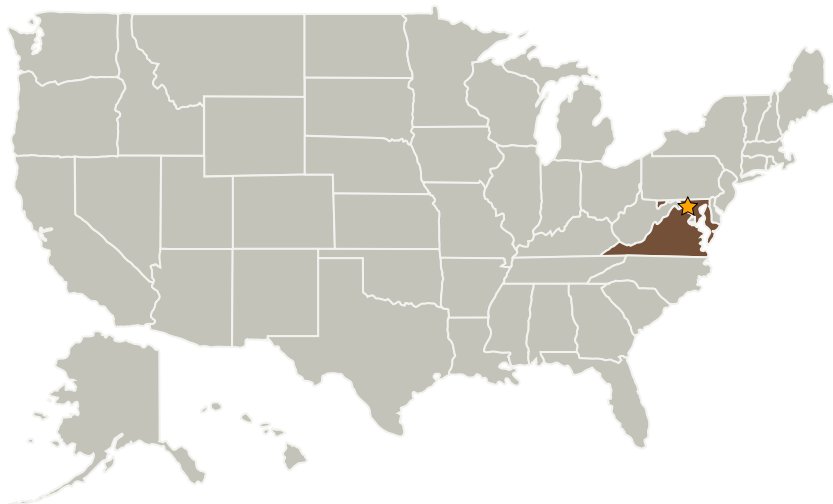
Completed Technology Project (2009 - 2009)



Project Introduction

In typical, multi-organizational networking environments, it is difficult to define and maintain a uniform authentication scheme that provides users with easy access to required information while maintaining the security and integrity of the underlying information. This proposal offers a unique and innovative architecture for doing so through the utilization of a Proxy Service Listener (PSL) and the implementation of a customized Domain Name Service (DNS) server. The PSL provides a centralized authentication function that acts as a credentialing authority for all network services, thereby enabling a single sign-on mechanism for all services/servers operating within the framework. This allows the implementation of a centralized access control infrastructure; yet, each service has the option to determine the access controls for its clients. Conforming to the Software-as-a-Service (SaaS) paradigm, the proposed solution has multiple benefits. It provides the means for NASA to offer a uniform access methodology to its large number of distributed end users. The proposed solution also provides protection against Denial of Service (DOS) attacks and an effective means for comprehensively monitoring usage of shared networking resources for security auditing and accounting purposes. It can be used to manage connections between services/applications just as effectively as between end users and applications/services.

Primary U.S. Work Locations and Key Partners



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Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Zron Networks, Inc.	Supporting Organization	Industry	Herndon, Virginia

Primary U.S. Work Locations	
Maryland	Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
 - └ TX11.6 Ground Computing
 - └ TX11.6.8 Cloud Computing